SEQUENCE LISTING

<110> Faustman, Denise L
The General Hospital Corporation

<120> TRANSPORTER PROTEIN SPLICE VARIANTS AND MODEL FOR IMMUNE DIVERSITY

<130> seqlist-MGH-002.1 PCT (MGH-1247-1)

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<150> US 09/061,764
<151> 1998-04-16

<160> 25

<170> PatentIn Ver. 2.0

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Phe Gln Glu Thr Lys Thr Gly Glu Leu Asn Ser Arg Leu Ser Ser Asp
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for translocation study

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<212> PRT
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for translocation study

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<210> 9
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for translocation study

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1 5 10 15

Arg Arg Pro Val Lys Val Tyr Pro
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<210> 10
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<213> Artificial Sequence

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chain amino acids 22-30

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<210> 11
<211> 25
<212> DNA
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<220>
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oligonucleotide probe

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<220>
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oligonucleotide probe

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20 25 30

Gln Gly Leu Pro Gly Leu Trp Leu Glu Gly Thr Leu Arg Leu Gly Gly
35 40 45

Leu Trp Gly Leu Leu Lys Leu Arg Gly Leu Leu Gly Phe Val Gly Thr
50 55 60

Leu Leu Leu Pro Leu Cys Leu Ala Thr Pro Leu Thr Val Ser Leu Arg
65 70 75 80

Ala Leu Val Ala Gly Ala Ser Arg Ala Pro Pro Ala Arg Val Ala Ser
85 90 95

Ala Pro Trp Ser Trp Leu Leu Val Gly Tyr Gly Ala Ala Gly Leu Ser
100 105 110

Trp Ser Leu Trp Ala Val Leu Ser Pro Pro Gly Ala Gln Glu Lys Glu
115 120 125

Gln Asp Gln Val Asn Asn Lys Val Leu Met Trp Arg Leu Leu Lys Leu
130 135 140

Ser Arg Pro Asp Leu Pro Leu Leu Val Ala Ala Phe Phe Phe Leu Val
145 150 155 160

Leu Ala Val Leu Gly Glu Thr Leu Ile Pro His Tyr Ser Gly Arg Val
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Ile Asp Ile Leu Gly Gly Asp Phe Asp Pro His Ala Phe Ala Ser Ala
180 185 190

Ile Phe Phe Met Cys Leu Phe Ser Phe Gly Ser Ser Leu Ser Ala Gly

195 200 205

Cys Arg Gly Gly Cys Phe Thr Tyr Thr Met Ser Arg Ile Asn Leu Arg
210 215 220

Ile Arg Glu Gln Leu Phe Ser Ser Leu Leu Arg Gln Asp Leu Gly Phe
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Phe Gln Glu Thr Lys Thr Gly Glu Leu Asn Ser Arg Leu Ser Ser Asp
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Thr Thr Leu Met Ser Asn Trp Leu Pro Leu Asn Ala Asn Val Leu Leu
260 265 270

Arg Ser Leu Val Lys Val Val Gly Leu Tyr Gly Phe Met Leu Ser Ile
275 280 285

Ser Pro Arg Leu Thr Leu Leu Ser Leu Leu His Met Pro Phe Thr Ile
290 295 300

Ala Ala Glu Lys Val Tyr Asn Thr Arg His Gln Glu Val Leu Arg Glu
305 310 315 320

Ile Gln Asp Ala Val Ala Arg Ala Gly Gln Val Val Arg Glu Ala Val
325 330 335

Gly Gly Leu Gln Thr Val Arg Ser Phe Gly Ala Glu Glu His Glu Val
340 345 350

Cys Arg Tyr Lys Glu Ala Lys Glu Gln Cys Arg Gln Leu Tyr Trp Arg
355 360 365

Arg Asp Leu Glu Arg Ala Leu Tyr Leu Leu Ile Arg Arg Val Leu His
370 375 380

Leu Gly Val Gln Met Leu Met Leu Ser Cys Gly Leu Gln Gln Met Gln
385 390 395 400

Asp Gly Glu Leu Thr Gln Gly Ser Leu Leu Ser Phe Met Ile Tyr Gln
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Glu Ser Val Gly Ser Tyr Val Gln Thr Leu Val Tyr Ile Tyr Gly Asp
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Met Leu Ser Asn Val Gly Ala Ala Glu Lys Val Phe Ser Tyr Met Asp
435 440 445

Arg Gln Pro Asn Leu Pro Ser Pro Gly Thr Leu Ala Pro Thr Thr Leu

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Pro Asp Arg Pro Val Leu Lys Gly Leu Thr Phe Thr Leu Arg Pro Gly
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Glu Val Thr Ala Leu Val Gly Pro Asn Gly Ser Gly Lys Ser Thr Val
500 505 510

Ala Ala Leu Leu Gln Asn Leu Tyr Gln Pro Thr Gly Gly Gln Val Leu
515 520 525

Leu Asp Glu Lys Pro Ile Ser Gln Tyr Glu His Cys Tyr Leu His Ser
530 535 540

Gln Val Val Ser Val Gly Gln Glu Pro Val Leu Phe Ser Gly Ser Val
545 550 555 560

Arg Asn Asn Ile Ala Tyr Gly Leu Gln Ser Cys Glu Asp Asp Lys Val
565 570 575

Met Ala Ala Ala Gln Ala Ala His Ala Asp Asp Phe Ile Gln Glu Met
580 585 590

Glu His Gly Ile Tyr Thr Asp Val Gly Glu Lys Gly Ser Gln Leu Ala
595 600 605

Ala Gly Gln Lys Gln Arg Leu Ala Ile Ala Arg Ala Leu Val Arg Asp
610 615 620

Pro Arg Val Leu Ile Leu Asp Glu Ala Thr Ser Ala Leu Asp Val Gln
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Cys Glu Gln Ala Leu Gln Asp Trp Asn Ser Arg Gly Asp Arg Thr Val
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Leu Val Ile Ala His Arg Leu Gln Thr Val Gln Arg Ala His Gln Ile
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Leu Val Leu Gln Glu Gly Lys Leu Gln Lys Leu Ala Gln Leu
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<213> Homo sapiens

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<400> 19

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Pro Thr Ala Leu Pro Leu Leu Arg Val Trp Ala Val Gly Leu Ser Arg
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65 70 75 80

Gly Ser Lys Ser Glu Asn Ala Gly Ala Gln Gly Trp Leu Ala Ala Leu
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Lys Pro Leu Ala Ala Ala Leu Gly Leu Ala Leu Pro Gly Leu Ala Leu
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Phe Arg Glu Leu Ile Ser Trp Gly Ala Pro Gly Ser Ala Asp Ser Thr
115 120 125

Arg Leu Leu His Trp Gly Ser His Pro Thr Ala Phe Val Val Ser Tyr
130 135 140

Ala Ala Ala Leu Pro Ala Ala Ala Leu Trp His Lys Leu Gly Ser Leu
145 150 155 160

Trp Val Pro Gly Gly Gln Gly Gly Ser Gly Asn Pro Val Arg Arg Leu
165 170 175

Leu Gly Cys Leu Gly Ser Glu Thr Arg Arg Leu Ser Leu Phe Leu Val
180 185 190

Leu Val Val Leu Ser Ser Leu Gly Glu Met Ala Ile Pro Phe Phe Thr
195 200 205

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Gly Arg Leu Thr Asp Trp Ile Leu Gln Asp Gly Ser Ala Asp Thr Phe
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        275                 280                 285

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305                 310                 315                 320

Leu Trp Gly Ser Val Ser Leu Thr Met Val Thr Leu Ile Thr Leu Pro
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Leu Leu Phe Leu Leu Pro Lys Lys Val Gly Lys Trp Tyr Gln Leu Leu
            340                 345                 350

Glu Val Gln Val Arg Glu Ser Leu Ala Lys Ser Ser Gln Val Ala Ile
        355                 360                 365

Glu Ala Leu Ser Ala Met Pro Thr Val Arg Ser Phe Ala Asn Glu Glu
    370                 375                 380

Gly Glu Ala Gln Lys Phe Arg Glu Lys Leu Gln Glu Ile Lys Thr Leu
385                 390                 395                 400

Asn Gln Lys Glu Ala Val Ala Tyr Ala Val Asn Ser Trp Thr Thr Ser
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Ile Ser Gly Met Leu Leu Lys Val Gly Ile Leu Tyr Ile Gly Gly Gln
            420                 425                 430

Leu Val Thr Ser Gly Ala Val Ser Ser Gly Asn Leu Val Thr Phe Val
        435                 440                 445

Leu Tyr Gln Met Gln Phe Thr Gln Ala Val Glu Val Leu Leu Ser Ile
    450                 455                 460
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Tyr Pro Arg Val Gln Lys Ala Val Gly Ser Ser Glu Lys Ile Phe Glu
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Tyr Leu Asp Arg Thr Pro Arg Cys Pro Pro Ser Gly Leu Leu Thr Pro
485 490 495

Leu His Leu Glu Gly Leu Val Gln Phe Gln Asp Val Ser Phe Ala Tyr
500 505 510

Pro Asn Arg Pro Asp Val Leu Val Leu Gln Gly Leu Thr Phe Thr Leu
515 520 525

Arg Pro Gly Glu Val Thr Ala Leu Val Gly Pro Asn Gly Ser Gly Lys
530 535 540

Ser Thr Val Ala Ala Leu Leu Gln Asn Leu Tyr Gln Pro Thr Gly Gly
545 550 555 560

Gln Leu Leu Leu Asp Gly Lys Pro Leu Pro Gln Tyr Glu His Arg Tyr
565 570 575

Leu His Arg Gln Val Ala Ala Val Gly Gln Glu Pro Gln Val Phe Gly
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Arg Ser Leu Gln Glu Asn Ile Ala Tyr Gly Leu Thr Gln Lys Pro Thr
595 600 605

Met Glu Glu Ile Thr Ala Ala Ala Val Lys Ser Gly Ala His Ser Phe
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Ile Ser Gly Leu Pro Gln Gly Tyr Asp Thr Glu Val Asp Glu Ala Gly
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Ser Gln Leu Ser Gly Gly Gln Arg Gln Ala Val Ala Leu Ala Arg Ala
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Leu Ile Arg Lys Pro Cys Val Leu Ile Leu Asp Asp Ala Thr Ser Ala
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Leu Asp Ala Asn Ser Gln Leu Gln Val Glu Gln Leu Leu Tyr Glu Ser
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Pro Glu Arg Tyr Ser Arg Ser Val Leu Leu Ile Thr Gln His Leu Ser
690 695 700

Leu Val Glu Gln Ala Asp His Ile Leu Phe Leu Glu Gly Gly Ala Ile
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Arg Glu Gly Gly Thr His Gln Gln Leu Met Glu Lys Lys Gly Cys Tyr
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Trp Ala Met Val Gln Ala Pro Ala Asp Ala Pro Glu
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<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

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<210> 21
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<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

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<210> 22
<211> 25
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<223> Description of Artificial Sequence:
oligonucleotide primer

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oligonucleotide primer

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Trp Val Leu Leu Arg Thr Ala Leu Pro Arg Ile Phe Ser Leu Leu Val
        35                  40                  45

Pro Thr Ala Leu Pro Leu Leu Arg Val Trp Ala Val Gly Leu Ser Arg
    50                  55                  60

Trp Ala Val Leu Trp Leu Gly Ala Cys Gly Val Leu Arg Ala Thr Val
65                  70                  75                  80

Gly Ser Lys Ser Glu Asn Ala Gly Ala Gln Gly Trp Leu Ala Ala Leu
                85                  90                  95

Lys Pro Leu Ala Ala Ala Leu Gly Leu Ala Leu Pro Gly Leu Ala Leu
            100                 105                 110

Phe Arg Glu Leu Ile Ser Trp Gly Ala Pro Gly Ser Ala Asp Ser Thr
        115                 120                 125

Arg Leu Leu His Trp Gly Ser His Pro Thr Ala Phe Val Val Ser Tyr
    130                 135                 140

Ala Ala Ala Leu Pro Ala Ala Ala Leu Trp His Lys Leu Gly Ser Leu
145                 150                 155                 160

Trp Val Pro Gly Gly Gln Gly Gly Ser Gly Asn Pro Val Arg Arg Leu
                165                 170                 175

Leu Gly Cys Leu Gly Ser Glu Thr Arg Arg Leu Ser Leu Phe Leu Val
            180                 185                 190

Leu Val Val Leu Ser Ser Leu Gly Glu Met Ala Ile Pro Phe Phe Thr
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Gly Arg Leu Thr Asp Trp Ile Leu Gln Asp Gly Ser Ala Asp Thr Phe
    210                 215                 220
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Thr Arg Asn Leu Thr Leu Met Ser Ile Leu Thr Ile Ala Ser Ala Val
225                 230                 235                 240

Leu Glu Phe Val Gly Asp Gly Ile Tyr Asn Asn Thr Met Gly His Val
                245                 250                 255

His Ser His Leu Gln Gly Glu Val Phe Gly Ala Val Leu Arg Gln Glu
            260                 265                 270

Thr Glu Phe Phe Gln Gln Asn Gln Thr Gly Asn Ile Met Ser Arg Val
        275                 280                 285

Thr Glu Asp Thr Ser Thr Leu Ser Asp Ser Leu Ser Glu Asn Leu Ser
    290                 295                 300

Leu Phe Leu Trp Tyr Leu Val Arg Gly Leu Cys Leu Leu Gly Ile Met
305                 310                 315                 320

Leu Trp Gly Ser Val Ser Leu Thr Met Val Thr Leu Ile Thr Leu Pro
                325                 330                 335

Leu Leu Phe Leu Leu Pro Lys Lys Val Gly Lys Trp Tyr Gln Leu Leu
            340                 345                 350

Glu Val Gln Val Arg Glu Ser Leu Ala Lys Ser Ser Gln Val Ala Ile
        355                 360                 365

Glu Ala Leu Ser Ala Met Pro Thr Val Arg Ser Phe Ala Asn Glu Glu
    370                 375                 380

Gly Glu Ala Gln Lys Phe Arg Glu Lys Leu Gln Glu Ile Lys Thr Leu
385                 390                 395                 400

Asn Gln Lys Glu Ala Val Ala Tyr Ala Val Asn Ser Trp Thr Thr Ser
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Ile Ser Gly Met Leu Leu Lys Val Gly Ile Leu Tyr Ile Gly Gly Gln
            420                 425                 430

Leu Val Thr Ser Gly Ala Val Ser Ser Gly Asn Leu Val Thr Phe Val
        435                 440                 445

Leu Tyr Gln Met Gln Phe Thr Gln Ala Val Glu Val Leu Leu Ser Ile
    450                 455                 460

Tyr Pro Arg Val Gln Lys Ala Val Gly Ser Ser Glu Lys Ile Phe Glu
465                 470                 475                 480
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Tyr Leu Asp Arg Thr Pro Arg Cys Pro Pro Ser Gly Leu Leu Thr Pro
                485                 490                 495

Leu His Leu Glu Gly Leu Val Gln Phe Gln Asp Val Ser Phe Ala Tyr
            500                 505                 510

Pro Asn Arg Pro Asp Val Leu Val Leu Gln Gly Leu Thr Phe Thr Leu
        515                 520                 525

Arg Pro Gly Glu Val Thr Ala Leu Val Gly Pro Asn Gly Ser Gly Lys
    530                 535                 540

Ser Thr Val Ala Ala Leu Leu Gln Asn Leu Tyr Gln Pro Thr Gly Gly
545                 550                 555                 560

Gln Leu Leu Leu Asp Gly Lys Pro Leu Pro Gln Tyr Glu His Arg Tyr
                565                 570                 575

Leu His Arg Gln Val Trp Lys Gln Val Ala
            580                 585
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SUBSTITUTE SHEET (RULE 26)